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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,281	01/30/2002	Jacques P. Tremblay	4082-0134P	3069

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EXAMINER
WEHBE, ANNE MARIE SABRINA

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/058,281	TREMBLAY, JACQUES P.	
	Examiner	Art Unit	
	Anne Marie S. Wehbe	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

This application in a continuation-in-part of U.S. Application No. 09/118,413, which is a continuatin-in-part of U.S. Application No. 08/404.888. The applicant is reminded that in order for benefit of priority to be granted to an earlier filed application, the later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994). Parent application 08/404,888 does not disclose genetically engineered myoblasts which express bFGF, or the transplantation of such genetically engineered myoblasts into recipient muscle tissue. As such, claims 3-5, 8, 11, and 14 do not receive benefit of priority to parent application 08/404,888. The effective priority date for claims 3-5, 8, 11, and 14 is the priority date of parent application 09/118,413, November 10, 1998. In regards to claims 1-2, 6-7, 9-10, 12-13, and 15, these claims are entitled to the benefit of priority to the 08/404,888 filing date of 3/16/95 to the extent that they read on non-genetically modified myoblasts.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 6, 9, 12, and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 5,833,978 (11/10/98), hereafter referred to as the '978 patent. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons. Claims 1-29 of the '978 patent recite methods of myoblast transplantation, methods of improving the fusion of myoblasts upon transplantation and methods of increasing the number of hybrid muscle cells in a recipient by pre-conditioning myoblasts prior to transplantation comprising culturing the myoblasts in the presence of human bFGF and in the absence of LIF ('978 patent, see claims 1, 15, 20-21, 25-26, and 28). Claims 9-10 and 24 further recite wherein the bFGF is provdied at a concentration of about 100 mg/ml for about 48 hours. The instant claims recite the same methods steps without the limitation that the culturing of the myoblasts occurs in the absence of LIF. Thus, the '978 claims represent a species of the broader claims in the instant application. It is well established that a species of a claimed invention renders the genus obvious. *In re Schaumann* , 572 F.2d 312, 197 USPQ 5 (CCPA 1978). Therefore, the instant claims are rendered obvious by claims 1-29 of the '978 patent.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4, 7, 10, and 13 are indefinite in that the claim language renders it unclear whether the composition of myoblasts is *in vitro* or *in* vivo. The claims as written are directed to a composition comprising a culture of myoblasts to be transplanted, i.e. which have not yet been transplanted. However, line 5 of independent claim 1 recites, "which transplanted myoblasts", which seems to indicate that the cells have already been transplanted. The claim is therefore confusing and clarification is requested. Furthermore, it is noted that a "culture" of myoblasts is commonly understood to mean cells which are grown *in vitro*, therefore if the applicant intends to claims cells which have already been transplanted, the use of the term "culture" would be confusing.

Claims 5-6, 8-9, 11-12, and 14-15 recite, "transplanting said culture of myoblasts into a recipient muscular tissue along with said amount of bFGF". The claims as written are indefinite in that it is unclear whether the transplantation step includes the administration of only the culture of myoblasts which have been grown in a certain amount of bFGF, or whether the step is

intended to include the co-adminsitration of an amount of bFGF separate from that included in the myoblast culture.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 6-7, 9-10, 12-13, and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by Rando et al. (1994) J. Cell. Biol., Vol. 125(6), 1275-1287. The applicant claims a composition comprising a culture of myoblasts comprising myoblasts and a muscle-fusion promoting amount of human basic fibroblast growth factor (bFGF), wherein the myoblasts have been grown in the presence of human basic fibroblast growth factor (bFGF). The applicant further claims said compositions wherein the culture comprises fibroblasts. In addition, the claims recite wherein the bFGF is added exogenously to the culture, or wherein the bFGF is present in the culture at 100 mg/ml concentration. The applicant also claims methods of improving the fusion of myoblasts upon transplantation into a recipient muscle tissue comprising

growing primary myoblasts in culture in the presence of an exogenously added amoun to bFGF and transplanting said culture of myoblasts into the recipient muscle tissue. In regards to claims 1-2, 7, 10, and 13, it is noted that these claims are product by process claims. The applicant is reminded that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

Rando et al. teaches a composition comprising primary myoblasts and 2.5 mg/ml of human bFGF obtained from Promega Corp (Rando et al., page 1277, column 1). Rando et al. further teaches the culture of the primary myoblasts in bFGF for at least 48 hours (Rando et al., page 1279, Table 1). Rando et al. also teaches that the cultures of primary myoblasts include fibroblasts (Rando et al., page 1284, column 2). Finally, Rando et al. teaches the transplantation of primary myoblasts cultured *in vitro* with bFGF resulting in substantial hybrid myofiber formation caused by fusion of the transplanted myoblasts and host fibers (Rando et al., 1281). In regards to the amount of bFGF in the cultures, please note that Rando et al. clearly demonstrates that 2.5 ng/ml of bFGF is capable of promoting fusion between transplanted and recipient myoblasts. As such, a composition of myoblasts grown in 2.5 mg/ml of bFGF and a composition of myoblasts grown in 100 mg/ml of bFGF appear to be identical in structure and function. Therefore, by teaching all the elements of the claims as written, Rando et al. anticipates the instant invention as claimed.

Please note that the office does not have the facilities for examining and comparing applicant's product with the product of the prior art in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed products are functionally different than those taught by the prior art and to establish patentable differences. See *Ex parte Phillips*, 28 USPQ 1302, 1303 (BPAI 1993), *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ2d 1922, 1923 (BPAI 1989).

Claims 1-2, 6-7, 9-10, 12-13, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,435,999 (7/24/99), hereafter referred to as Austin. The applicant claims a composition comprising a culture of myoblasts comprising myoblasts and a muscle-fusion promoting amount of human basic fibroblast growth factor (bFGF), wherein the myoblasts have been grown in the presence of human basic fibroblast growth factor (bFGF). The applicant further claims said compositions wherein the culture comprises fibroblasts. In addition, the claims recite wherein the bFGF is added exogenously to the culture, or wherein the bFGF is present in the culture at 100 mg/ml concentration. The applicant also claims methods of improving the fusion of myoblasts upon transplantation into a recipient muscle tissue comprising growing primary myoblasts in culture in the presence of an exogenously added amoun to bFGF and transplanting said culture of myoblasts into the recipient muscle tissue. In regards to claims 1-2, 7, 10, and 13, it is noted that these claims are product by process claims. The applicant is reminded that "[E]ven though product-by-process claims are limited by and defined by the

process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

Austin teaches compositions comprising cultures of primary myoblasts, particularly human myoblasts, and FGF and LIF, wherein the concentration of FGF is from 1-100 mg/ml; and methods of transplanting said cultured myoblasts into muscle fiber resulting in fusion of the transplanted myoblasts with the recipient muscle (Austin, column 1, lines 34-38, and column 7-8, claims 1-31). Austin also teaches combining human myoblasts with human cytokines (Austin, column 2, lines 33-42). In addition, Austin teaches the culture of the cells in the presence of cytokine for greater than 2 days (Austin, Figure 2). Thus, Austin teaches the embodiment of human myoblasts and human FGF. Therefore, by teaching all the elements of the claims as written, Austin anticipates the instant invention as claimed.

Claims 1, 3, 5, 7-8, 10-11, 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,681,735 (10/28/97), hereafter referred to as Emerson et al. The applicant claims a composition comprising myoblasts and bFGF wherein the myoblasts have been genetically engineered to express a gene sequence encoding bFGF under the control of a promoter; and methods of improving the fusion of myoblasts comprising growing myoblasts genetically engineered to express a gene sequence encoding bFGF under the control of a promoter in culture and transplanting said culture to recipient muscle. The applicant further

claims said compositions and methods wherein the bFGF is in a concentration of 100 mg/ml, and wherein the cells are cultured for at least 2 days.

Emerson et al. teaches genetically altering cultured myoblasts to comprise a recombinant gene under the transcriptional control of a myoblast-specific transcriptional control, wherein the recombinant gene is bFGF (Emerson et al., columns 1-2, and columns 22-23, in particular see lines 3-12 in column 23). Emerson et al. further teaches the transplantation of such genetically engineered myoblasts into patients resulting in fusion of the transplanted cells with the recipient muscle (Emerson et al., columns 22-23). Although Emerson et al. does not specifically teach the level of expression of the recombinant gene, the structure of the genetically engineered myoblasts taught by Emerson et al. appears to be identical to that recited in the instant claims. Please note that the office does not have the facilities for examining and comparing applicant's product with the product of the prior art in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed products are functionally different than those taught by the prior art and to establish patentable differences. See *Ex parte Phillips*, 28 USPQ 1302, 1303 (BPAI 1993), *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ2d 1922, 1923 (BPAI 1989). Therefore, by teaching all the elements of claims as written, Emerson et al. anticipates the instant invention as claimed.

Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,685,934 (2/3/04), hereafter referred to as Mallet et al.. The applicant claims a composition

comprising myoblasts and bFGF wherein the myoblasts have been genetically engineered to express a gene sequence encoding bFGF under the control of a viral promoter.

Mallet et al. teaches primary cultures of cells infected with a recombinant adenovirus encoding human bFGF under transcriptional control of the viral RSV promoter, wherein the cells are myoblasts (Mallet et al., column 6, lines 30-64, and columns 9-10). Thus, by teaching all the limitations of the claims as written, Mallet et al. anticipates the instant invention as claimed.

Please note that the office does not have the facilities for examining and comparing applicant's product with the product of the prior art in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is upon the applicant to prove that the claimed products are functionally different than those taught by the prior art and to establish patentable differences. See *Ex parte Phillips*, 28 USPQ 1302, 1303 (BPAI 1993), *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ2d 1922, 1923 (BPAI 1989).

No claims are allowed.

Any inquiry concerning this communication from the examiner should be directed to Anne Marie S. Wehbé, Ph.D., whose telephone number is (571) 272-0737. The examiner can be reached Monday- Friday from 10:30-7:00 EST. If the examiner is not available, the examiner's supervisor, Amy Nelson, can be reached at (571) 272-0804. For all official communications, the

technology center fax number is (703) 872-9306. For informal, non-official communications only, the examiner's direct fax number is (571) 273-0737.

Dr. A.M.S. Wehbé

ANNE M. WEHBE' PH.D
PRIMARY EXAMINER